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SYSTEM FOR COUNTERACTING A DISTURBANCE IN A SPACECRAFT

Abstract

A system for counteracting a disturbance in a spacecraft includes a biasing apparatus that is coupled to the spacecraft and a spacecraft controller within the spacecraft. The disturbance has a known sign, magnitude and time. The biasing apparatus controls the biasing apparatus to place the spacecraft in a first dynamic state or position as a function of the sign, magnitude, and time of the disturbance. The controller also controls the spacecraft to a second dynamic state as a function of the known sign, magnitude, and time so that the spacecraft is oriented in a position other than the desired orientation so that after the disturbance the spacecraft is oriented in the desired orientation in response to the disturbance. The biasing apparatus may comprise a momentum wheel and the disturbance may comprise thrusting firing used for controlling momentum dumping.